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EXPLORING BUSINESS AND TECHNICAL EDUCATION UNIVERSITY LECTURERS' WORK MOTIVATION, BASIC NEED SATISFACTION AND ENGAGEMENT RELATIONSHIP

Samson Onyeluka Chukwuedo
Nnamdi Azikiwe University, Nigeria
E-mail: so.chukwuedo@unizik.edu.ng

Jane Nwakaego Egbri
University of Benin, Nigeria
E-mail: jane.edgbri@uniben.edu

Abstract

The link between basic psychological needs satisfaction of employees and their engagement in other administrative organizations is relatively established. However, there is a paucity of research findings regarding this link in the educational organizations in general, and vocational education in particular. This research, therefore, determined the relations between work-related basic need satisfaction (WBNS), work engagement, and work motivation in aspects of vocational education. The participants were 299 business and technical education lecturers of the vocational education programme in Nigeria universities. The research utilized three scales, which were embedded in a questionnaire for data collection. The face and construct validity of the scales were established. Data analyses were performed with correlation, and regression of paths by applying 2000 re-samples bias-corrected (BC) bootstrapping method. The result revealed a significant positive WBNS-motivation, WBNS-engagement, and motivation-engagement relations. However, work motivation could not mediate the link in the research model.
Keywords: *basic need satisfaction, work engagement, work motivation, vocational education lecturers*

Introduction

Realizing a healthy work situation in the educational institution, amid the varying tasks has become so imminent in the present high knowledge-seeking environment. One tier of education that has complex and multiple work situation is university education (Lester & Costley, 2010). In the university education, the field of vocational and technical education is obliged to training the required skilled manpower needed in the business sectors and the industries, as well as allied teachers (Federal Republic of Nigeria, FRN, 2013). Thus, this research deemed it fit to consider this category of lecturers (Business and technical/technology education lecturers). According to Chukwuedo and Igbinedion (2014), vocational education lecturers perform three core tasks, which include, teaching, research, and administration. The teaching task requires the lecturer to make use of both the regular classroom, laboratories, studios, and workshops for the successful training of the students. Thus, it becomes necessary to consider the WBNS as well as the motivation and engagement of the lecturers.

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Research Problem

The concept of need is fundamental in educational institutions for teachers' development. Because of the multiple job tasks of the vocational educators, with particular emphasis on business and technical/technology education lecturers, it is necessary to determine the work-related needs of the lecturers in higher education. The positive organizational behavior (POB) research is a necessity for human development in the educational organization (Bakker & Schaulfeli, 2008). Creating the work conditions that sustain and foster teachers' work well-being helps to attract and retain competent teachers (Bakker et al., 2011). These work conditions are psychological and physiological needs that are fundamentally necessary for effective work engagement and the commitment of lecturers. When these conditions are not explored in vocational education, improving the work conditions of the lecturers will just be a fantasy. To control the tendency for job dissatisfaction and potential attrition factors in business and technical education, research on the link between business and technical lecturers' WBNS, motivation, and engagement at work is essential.

Research Focus

Basic psychological needs are hinged on self-determination theory (SDT). Empirical research on SDT revealed that autonomy, competence, and relatedness needs are the elements of WBNS (Deci & Ryan, 2002, 2008; Deci & Vansteenkiste, 2004; Janssen et al., 2013; Brien et al., 2012). These needs in the teaching-learning process are essential to be fulfilled for effective teaching/learning. While autonomy reflects the need for some level of control and responsibility for an individual's behavior, the need for competence involves an individual interacting with the environment to attain the desired teaching-learning outcomes (Brien et al., 2012); whereas the need for relatedness is a person's desire to be loved and to love others around the work environment (Ryan & Deci, 2000). Research has shown a significant correlation between WBNS dimensions and job outcomes. For instance, Silman (2014) revealed that WBNS predicted engagement. However, there is a paucity of research on WBNS-engagement relations in the education context.

Work engagement is a concept that is hinged on the job demand resource (JD-R) model, which theorizes that "job resources include the physical, emotional, and managerial features of a job for employees to complete their tasks successfully" (Bakker et al., 2007, p. 275). Work engagement is, therefore, the deliberate and careful distribution of an employee's resources on the multiple tasks expected of the employee within a specific occupation (Christian et al., 2011). Thus, engagement is a function of energy, participation, and efficacy. Engagement is measured differently from burnout because the concepts are not the same (Schaufeli et al., 2002). Thus, being burned-out is not equal to being engaged by a lecturer and vice versa (Shaufeli & Bakker, 2003). Nevertheless, a motivated lecturer may be engaged even when there is a level of burnout.

Since engagement has to do with being energetically involved in a task, vigor, dedication, and absorption have been typified as its dimensions. Vigor is considered as being highly enthusiastic and mentally flexible at work; hence, it is a lecturer's voluntary effort at work, not being easily fatigued, but to be persistent at work. Dedication has to do with procuring a sense of importance, by exhibiting enthusiasm about the job. Lastly, absorption entails when an employee is immersed happily in their work, without feeling to be detached from the work (Schaufeli et al. 2002). All in all, work motivation is essential in engagement.

Work motivation dovetails to active drives that are within and beyond an employee's reality to establish a base with work-related behavior with its method, path, intensity, and duration (Tremblay et al., 2009). It measures intrinsic and extrinsic motivation, as well as amotivation (Kanfer et al., 2008). In this research, it is proposed that work motivation will

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have a significant relationship with WBNS and work engagement. Since former research has established that WBNS could lead to work motivation (Liga et al., 2018; Del Valle et al., 2018) and a motivated employee will be highly engaged (Silman, 2014), work motivation is presumed to mediate the WBNS-engagement relation in this research.

The model shown in Figure 1 represents the purpose and outcome of this research. Specifically, this research ascertained the relation between WBNS, work motivation, and work engagement. Thus, the hypotheses of this research were:

Hypothesis 1: WBNS is a significant positive predictor of work engagement.

Hypothesis 2: WBNS is a significant positive predictor of work motivation.

Hypothesis 3: Work motivation is a significant positive predictor of work engagement.

Hypothesis 4: Work motivation is a significant mediator between WBNS and work engagement.

Research Methodology

General Background

The quantitative research was employed, with a cross-sectional correlational survey that enhanced data collection from a single questionnaire administration (Gay et al., 2011). Thus, this research established the correlation between the variables upon which the data were collected. This design is considered suitable because it involves the collection of data once from the respondents, and the correlation between the variables (viz. WBNS, work motivation, and work engagement) was established. These three correlated constructs constituted the predictor, mediator, and criterion/outcome variables respectively. These variables are functions of the self-determination theory and the JD-R model. The research was carried out from April to July 2019. It covered business and technical education lecturers in Nigeria universities, such that their opinions on their WBNS, work motivation, and work engagement were sought. A written informed consent, attached with the questionnaire, was used to seek the consents of the lecturers as an ethical aspect of obtaining responses for this research.

Sample

The participants of this research were 299 business education (n = 199) and technical/technology education (n = 100) lecturers who were drawn from a population of about 1187 lecturers in public or government-owned Universities from the six geopolitical zones in Nigeria. The multi-stage sampling technique was adopted to ensure that the six geopolitical zones were proportionally covered and represented. Taro Yamane's formula (Israel, 2003) was used to calculate the sample size.

Instrument and Procedures

The WBNS was measured with its adapted scale (van de Broeck, et al., 2010), which has16 items on a 5-point Likert type of scale ranging from never (1), rarely (2), sometimes (3), often (4) to always (5) The scale has three subscales that measured the need for autonomy (6 items, e.g. "I feel like I can be myself at work"), competence (4 items, e.g. "I master my tasks at my job") and relatedness (6 items, e.g. "at work, I feel part of a group"). Work engagement was measured with the UWES 17 item scale (Schaufeli, et al. 2002), rated on a 5-point scale ranging from never (1), rarely (2), sometimes (3), often (4) to always (5) This scale has three subscales that measure vigor (6 items, e.g. "at my job I am very resilient mentally"), dedication (5 items,

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e.g. "my job inspires me") and absorption (6 items, e.g. "I am immersed in my work"). Lastly, work motivation was measured with a single scale of six items made up of one item each from the six subscales of the work motivation scale (Tremblay et al. 2009). The items (e.g. "because I derive much pleasure from learning new things, because this type of work provides me with security, and I don't know why too much is expected of us") were rated on a 5-point response option ranging from corresponds not all (1) via corresponds moderately (3) to corresponds exactly (5).

Face and construct validities of the scales were determined because the scales were (a) adapted by using a 5-point response option instead of a 7-point response option, and (b) not originally developed and tested among Nigerian lecturers in general and vocational education in particular. The face validity was conducted with three experts, while the construct validity was determined using the indexes of confirmatory factor analysis (CFA, Anderson & Gerbing, 1984): the ratio of chi-square to the degree of freedom ($\chi^2/df \leq 2.50$), Comparative Fit Index (CFI ≥ .90), Goodness of Fit Index (GFI ≥ .90) and Root Mean Square Error of Approximation (RMSEA ≤ .08). The three-factor models of the WBNS ($\chi^2/df = 2.51$, CFI = .902, GFI = .899, RMSEA = .078, $p < .001$) and work engagement ($\chi^2/df = 2.46$, CFI = .911, GFI = .909, RMSEA = .080, $p < .001$) yielded relatively good data fit. While the one-factor model of work motivation yielded excellent data fit ($\chi^2/df = 2.13$, CFI = .935, GFI = .926, RMSEA = .072, $p > .01$). These approaches showed that the scales used for the questionnaire were valid for this research.

The internal consistency of the scales was established with Cronbach's alpha. The reliability coefficient of the WBNS scale (α = .868) and its subscales – autonomy (α = .878), competence (α = .891), and relatedness (α = .846) were found satisfactory. Similarly, the reliability coefficient of the work engagement scale (α = .893) and its subscales – vigor (α = .877), dedication (α = .859), and absorption (α = .849) were also found satisfactory. Lastly, the work motivation scale also gave rise to a satisfactory reliability coefficient (α = .856).

Data Collection and Analysis

The questionnaire was conveniently administered to business and technical/technology education lecturers of vocational and technical education. Alongside the researchers, four research assistants were used for the data collection. The research assistants were briefed by the researchers on how to administer and retrieve the questionnaires. The administration and retrieval of the questionnaire lasted for 13 weeks, because of the wide coverage of the geopolitical zones and the distance apart of the universities studied.

The data analyses were conducted using SPSS and PROCESS macro, by employing mean, standard deviation, Cronbach's alpha (α), correlation and regression analyses, and 2000 re-samples bias-corrected (BC) bootstrapping (Hayes 2013) The SPSS was applied for mean, standard deviation, Cronbach's alpha, Pearson's correlation, and regression analyses, while PROCESS macro was used to conduct path analysis with BC bootstrapping at 95% confidence interval (CI).

Research Results

Initial data analysis was performed to establish a significant level of correlations among the variables to authenticate the need for mediation analysis.

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Table 1
Descriptive statistics (mean, SD, and bivariate correlation) of the research scales/subscales

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
1. Autonomy	4.54	0.477	1											
2. Competence	4.43	0.510	.444**	1										
3. Relatedness	4.45	0.461	.705**	.620**	1									
4. Vigor	4.41	0.684	.536**	.424**	.536**	1								
5. Dedication	4.37	0.731	.556**	.351**	.568**	.843**	1							
6. Absorption	3.72	0.790	.249**	-.024	.147*	.175**	.326**	1						
7. Intrinsic motivation	4.59	0.751	.324**	.293**	.302**	.272**	.259**	.041	1					
8. Extrinsic motivation	4.47	0.613	.385**	.304**	.363**	.254**	.282**	.069	.628**	1				
9. Amotivation	4.60	0.584	.283**	.360**	.372**	.236**	.248**	.071	.386**	.384**	1			
10. Work basic need	4.48	0.412	.868**	.763**	.919**	.589**	.589**	.162**	.359**	.414**	.391**	1		
11. Work motivation	4.51	0.544	.414**	.360**	.408**	.296**	.316**	.073	.770**	.964**	.556**	.463**	1	
12. Work engagement	4.16	0.577	.552**	.297**	.507**	.818**	.883**	.679**	.230**	.245**	.225**	.545**	.277**	1

Note. $^{**}p < .01$, $^{*}p < 0.05$, *M*-mean, *SD*-standard deviation**.**

The results presented in Table 1 reveal the correlations between the research variables and the dimensions. The table also shows the mean responses, *SD*, and Cronbach's alpha of the research variables. The association among WBNS, work engagement and work motivation are statistically significant ($p < .01$). The result also revealed relative statistical significance between the dimensions of the research variable. All in all, the results depicted that WBNS and work engagement ($r = .463$), WBNS, and work motivation ($r = .545$), as well as work motivation and work engagement ($r = .277$), have significant positive relationships.

Table 2
Simple linear regression of the predictor, mediator and outcome variables

Hypotheses	β	*F*	R^2
WBNS → Work Engagement	.545	125.592***	.295
WBNS → Work Motivation	.463	81.147***	.212
Work Motivation → Work Engagement	.277	24.685***	.074

Note. $^{***}p < .001$; degree of freedom (df) = 1, 297

Table 2 represents the outcomes of the test of hypotheses 1 to 3. First, it was found that WBNS significantly predicted work engagement ($\beta = 0.545$, F (1, 297) = 125.592, $\Delta R^2 = .295$, $p < .001$). The ΔR^2 depicted that WBNS may account for 29.5 percent of the variance in work engagement in this research. Similarly, the results showed that WBNS significantly predicted work motivation ($\beta = 0.463$, F (1, 297) = 81.147, $\Delta R^2 = .212$, $p < .001$). The ΔR^2 indicated that WBNS explained the 21.2 percent of the variance that occurred in work motivation. Finally, work motivation positively predicts work engagement ($\beta = 0.277$, F (1, 297) = 24.685, ΔR^2 =

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.074, $p < .001$). This prediction revealed that work motivation also explained the 7.4 percent of the variance in work engagement. In all, hypotheses 1, 2, and 3 are accepted in this research.

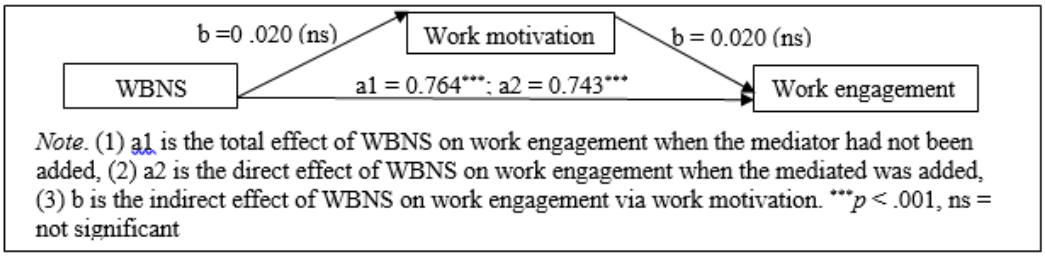
Table 3
Bias corrected bootstrap on the presumed mediation role of work motivation

	Work basic need → Work motivation → Work engagement		
Effects	Estimate	*SE*	95% CI [*LL*, *UL*]
Total	.764***	0.068	[0.630, 0.898]
Direct	.743***	0.077	[0.592, 0.895]
Indirect	.020 (ns)	0.051	[-0.026, 0.090]

Note. ***$p < .001$, ns = not significant, CI = confidence interval, *LL* = lower limit, *UL* = upper limit

Table 3 reveals that the total effect (β = 0.764, *SE* = 0.068, $p < .001$) and the direct effect (β = 0.743, *SE* = 0.077, $p < .001$) of the relation between WBNS and work engagement were statistically significant via work motivation. Conversely, the indirect effect (β = 0.020, *SE* = 0.051, CI: -0.026, 0.090) was not significant. Hence, work motivation did not significantly mediate the WBNS-work engagement relation in this research. This result is further illustrated schematically in figure 1.

Figure 1
Mediation test of work motivation in WBNS-engagement relation



Note. (1) a1 is the total effect of WBNS on work engagement when the mediator had not been added, (2) a2 is the direct effect of WBNS on work engagement when the mediated was added, (3) b is the indirect effect of WBNS on work engagement via work motivation. ***$p < .001$, ns = not significant

Discussion

The current research determined the mediating role of work motivation in the relation between WBNS and work engagement of business and technical/technology education lecturers in the field of vocational and technical education. The proposed research model could not confirm that work motivation is the mechanism for establishing the correlation between WBNS and work engagement. Thus, work motivation did not mediate the relation in this research. Work engagement has empirically proved to promote job performance (Bakker & Demerouti, 2008), hence educational stakeholders should not neglect WBNS and work motivation in any form in the work behaviors of employees.

Considering hypothesis 1, it was expected and found that WBNS positively and significantly predicted work engagement. This result implies that increased WBNS (autonomy, competence, and relatedness) leads to an increase in work engagement (vigor, dedication, and

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absorption). Literature showed that there is various research in other organizations, but a paucity of an empirical investigation on WBNS and work engagement relation in the educational institutions (Demerouti & Bakker, 2011; Klassen et al., 2013; Luthans, 2002; Silman, 2014). The finding is inconsonant with previous studies (e.g. Silman, 2014), that work satisfaction of WBNS leads to high work engagement (c.f. Ogbuanya & Chukwuedo, 2017).

The findings of hypothesis 2 confirmed that WBNS significantly predicted work motivation. Because of the paucity of empirical findings on the relationship between WBNS and work motivation, this is one novelty of this research. Hence, it is a contribution to the existing literature (e.g. Deci & Ryan, 2002; Gagne & Deci, 2005) which also supports the tenets of the theory of self-determination. The work motivation of teachers inadvertently, indirectly, and predictably increases as a result of WBNS. Thus, the finding complements previous findings (e.g. Deci & Ryan, 2008; Gagne & Deci, 2005; Garland & Lam, 2008; Tremblay et al., 2009), which illustrate that the element and dimensions of self-determination theory explain work motivation, attitude, and behaviors.

The analysis performed to test hypothesis 3 revealed that work motivation was a significant positive predictor of work engagement. This result explains that employees' work motivation enhances work engagement. Although this result may not be surprising, employers of labor, vocational organizational managers, and school administrators place more emphasis on the drives and mechanisms that promote employees' extrinsic motivation (Olorunsola & Bamijoko, 2005; Muogbo, 2013) rather than the entire components of work motivation. Consequently, less attention is on the mechanisms that will inevitably improve employees' intrinsic work motivation (Arar & Massry-Herzllah, 2016; Vanlommel et al., 2016; Wairimu, 2014). Intrinsic work motivation facilitates work engagement, which in turn improves employee's job performance. This call brings to mind, the need for vocational education institutions to always consider intrinsic and extrinsic motivation as well as a motivated teachers' work and career outcomes.

Limitations

The fact that this research has provided some findings that can be of great benefit to the educational organizations does not mean it is void of limitations. Because the research population is distinct and relatively small, causal inferences and generalization of the findings to other employees should be made with caution. However, an attempt was made to control and minimize this effect by applying a 2000 re-sample bootstrap iteration to establish a relative generalization of findings. Additionally, this research is a cross-sectional survey design, which does not permit causal inference to be drawn. It is, therefore, recommended that the research should be extended by employing a longitudinal or experimental design. Finally, the research used self-report measures which usually give rise to potential common method bias. Thus, alternate measures are suggested in allied future studies.

Conclusions

The correlation between WBNS and engagement in non-educational organizations has been relatively established, but research attention of this possibility was still needed in the educational setting. From the findings of this research, it has been established that WBNS and work motivation are important motivational needs that foster the work engagement of business and technical education lecturers. As a novel contribution to the mediator of WBNS-engagement relation, work motivation did not mediate the relation in this research. This indicates that work motivation of business and technical education lecturers requires attention for a higher WBNS-engagement relation among the lecturers. Thus, the findings of this research have added to

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the extant literature on SDT and JD-R model. Additionally, these findings call the attention of vocational organizational administrators, managers, and education counsellors in recognizing the relevance of promoting work motivation for proactive workplace conditions in education.

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Samson Onyeluka Chukwuedo *(Corresponding author)*	PhD, Industrial Technical Career and Workforce Training, Lecturer, Technology and Vocational Education, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria. E-mail: so.chukwuedo@unizik.edu.ng ORCID: https://orcid.org/0000-0001-7496-1945
Jane Nwakaego Egbri	PhD, Senior Lecturer, Vocational and Technical Education, University of Benin, Edo State, Nigeria. E-mail: jane.edgbri@uniben.edu